

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 33

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TAKURO SEKIYA

MAILED

Appeal No. 2000-1689
Application No. 08/547,904

SEP 23 2002

ON BRIEF

**PAT. & T.M. OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES**

Before THOMAS, FLEMING and DIXON, Administrative Patent Judges.

THOMAS, Administrative Patent Judge.

DECISION ON APPEAL

Appellant has appealed to the Board from the examiner's final rejection of claims 1, 3 through 5, 9 and 12. A copy of representative claim 1 is appended to this decision.

The following references are relied on by the examiner:

Cowger et al. (Cowger) 4,931,811 Jun. 05, 1990

Kashimura et al. (Kashimura) 5,245,361 Sep. 14, 1993

Claims 1, 3 through 5, 9 and 12 stand rejected under 35 U.S.C. § 103. As evidence of obviousness, the examiner relies on Kashimura in view of Cowger.

Rather than repeat the positions of the appellant and the examiner, reference is made to the brief and the answer for the respective details thereof.

OPINION

Except for the examiner's reliance upon additional prior art in the answer over that relied upon to reject the claims in the final rejection, we sustain the rejection of all claims on appeal under 35 U.S.C. § 103 for the reasons set forth by the examiner in the answer, as embellished upon here. Appellant has presented arguments only as to independent claims 1 and 12 on appeal and dependent claim 9.

At the outset, we address the examiner's additional reliance upon the newly mentioned patents to Kurata at the bottom of page 5 of the answer and to Wada at the top of page 7 of the answer. These references have not been relied upon as a basis to reject the claims on appeal in the final rejection or answer as clearly stated therein.

Where a reference is relied on to support a rejection, whether or not in a "minor capacity" there would appear to be no excuse for not positively including the reference in the statement of the rejection.

In re Hoch, 428 F.2d 1341, 1342, 166 USPQ 406, 407 (CCPA 1970). Although appellant is correct at pages 3 and 4 of the reply brief that the examiner has effectively set forth new grounds of rejections based upon this new art, we have not considered the two new references in our deliberations and do not base our affirmance on any teaching, showing or suggestion therein.

As to the merits of the rejections relied upon by the examiner as to Kashimura and Cowger, our study of Kashimura leads us to disagree completely with appellant's initial assertion at page 8 of the principal brief on appeal, as developed more fully at pages 9 through 13, that Kashimura does not teach or otherwise indicate that the recording head unit is detachable from the ink reservoir unit as set forth in independent claims 1 and 12 on appeal.

Kashimura teaches and shows three embodiments. The initial two embodiments comprising figures 3 through 14 appear to us to be consistent with the prior art showings in figures 1 and 2 that the integrated recording head and ink tank unit 101 in figures 1 and 2 and the corresponding integrated recording head and ink tank 10 in figures 1 through 14 do not contain detachable recording head and ink tank portions. No such feature is shown in figures 1 through 14. On the other hand, the examiner has relied upon the third embodiment in figures 15 through 22. The examiner first asserts the detachability of the recording head element 311 from its corresponding ink tank 312 (both comprising element 10 in this embodiment) according to the figure 17 showing as urged by the examiner at pages 3 and 4 final rejection. The manner of their connectability is said by the examiner to suggest to the artisan that the reservoir was obviously removable from the head. This conclusion is repeated at page 4 of the

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answer where the examiner states that the artisan would have obviously concluded that since the particular wall portions are expandable for engagement, they clearly would have been expandable for disengagement purposes.

All of the initial teachings at the bottom of columns 15 and 16 of Kashimura indicate an integrated type recording head structure. A detailed study of figures 16A through 16C and the discussion of figure 17 beginning at the bottom of column 17 to the top of column 19 clearly indicates that the head element 311 is engagable with ink tank 312 as shown by the arrow heads A in figure 17 by the engagement of the opening 312b within the ink tank 312 to engage the projection 311b of the recording head 311.

We do not agree with appellant's conclusion at page 11 of the principal brief on appeal that such an arrangement yields a permanent joining of the ink tank 312 with its corresponding head element 311. The very nature of the detent arrangement of the projection 311b of the recording head element 311 with the opening 312b within the ink tank 312 indicates their respective detachability from each other. The discussion of figure 17 beginning at the bottom of column 17 clearly makes evident to the artisan that the expandable nature of the wall portions associated with the opening 312b within the walls of ink tank 312 obviously lends themselves to detachable engagement and disengagement to the extent recited in independent claims 1 and 12 on appeal.

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Moreover, column 18, lines 28 through 42 indicate a specific alternative teaching in addition to utilizing the flexibility or elasticity of the wall portion of the ink tank 312 (column 18, lines 32 and 33). Alternatively, the use of projection 311b of the recording head 311 being supported by a spring method is also specifically taught, but apparently not shown in any figure. Thus, we conclude that according to the examiner's reasoning there is ample basis within the teachings and suggestions of Kashimura of detachable engagement of the respective head unit 311 and its corresponding ink tank 312.

Appellant's second line of reasoning arguing patentability at pages 8 and 9 of the principal brief on appeal applies only to claim 12, that the recording head unit is required by this claim to include electrical contacts such that when mounting a recording head unit and the ink reservoir in the carriage, electrical contacts is made between electrical contacts of the recording head unit and electrical contacts of the carriage. This argument is further developed at pages 13 and 14 of the brief.

Connecting terminal 311e mates with the corresponding connecting terminal 320a on the carriage 20 shown initially in figures 16A and 18A. Succeeding figures, especially those in figure 21B and the various portions of figure 22, detail the manner in which this is to take place since the positional relationship of these elements is different in this embodiment than in the earlier first and second embodiments in Kashimura as noted at the top of column 17. Because the electrical contact elements 311e carry the

numerical identifier 311, it is clearly taught and shown to be a part of the head element 311 per se contrary to the urging set forth by appellant in the paragraph bridging pages 13 and 14 of the principal brief on appeal.

Lastly, we turn to the feature of independent claim 12 on appeal where the ink reservoir is required to have a vent closed by a seal member which, at the end of claim 12, is removed. Correspondingly, dependent claim 9 from its parent independent claim 1 requires that the vent be closed by a removable seal member. There being no apparent vent opening in any of the combined head and reservoir members 10 in any of the embodiments in Kashimura, the examiner relies upon Cowger as to two features, the initial one relating to the requirement of a stainless steel mesh filter element of independent claim 1 on appeal. The examiner's final rejection page 4 relies upon the corresponding mesh filter 26 in figure 1 of Cowger which is stated to be comprised of stainless steel wire according to the teaching at the middle of column 3 of Cowger. This obviously buttresses more specifically the existing teaching of the filter 311d in figure 17 of Kashimura.

Although Kashimura does not detail in any manner a vent for his reservoir or ink tank 312, a need for such is clearly taught by Cowger according to the entirety of the teachings and is specifically shown at figure 1 as air vent 30. We agree with the

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examiner's views expressed in the final rejection and answer that it would have been obvious to utilize such vent in assembly 10 in Kashimura according to the general teachings of the need thereof in Cowger. Although we do not fully agree with the examiner's view that placing a removable seal member over the air vent 30 in figure 1 of Cowger was necessarily inherent, we do agree with the reasoning of the examiner set forth at page 6 of the answer that due to normal shipping operations, the seal would have prevented the ink from the reservoir from leaking out of the reservoir due in part at least to pressure changes in the reservoir by movement during transportation. At least during operation, according to the function at the end of claim 12 on appeal, it would have been obvious according to Cowger's teachings to permit the ink within the foam element 12 in figure 1 of Cowger to properly be fed by the pressure of the atmosphere through the shaped standpipe opening generally designated as element 14 in this figure by the use of such a removable seal. We are therefore unpersuaded by appellant's arguments as to these features at pages 14 and 15 of the principal brief on appeal.

In view of the foregoing, we have sustained the rejection of claims 1, 3 through 5, 9 and 12 under 35 U.S.C. § 103. As such, the decision of the examiner is affirmed.

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No time period for taking any subsequent action in connection with this appeal
may be extended under 37 CFR § 1.136(a).

AFFIRMED

JAMES D. THOMAS
Administrative Patent Judge

MICHAEL R. FLEMING
MICHAEL R. FLEMING
Administrative Patent Judge

JOSEPH L. DIXON
JOSEPH L. DIXON
Administrative Patent Judge

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APPENDIX
Claim 1

1. A recording head of an inkjet recording apparatus for recording an image on an object, comprising:
 - a recording head unit supplied with ink for recording an image on a recording object by forming a jet of the ink, said recording head unit comprising:
 - a nozzle for ejecting said jet;
 - a passage of ink provided in communication with said ink nozzle for supplying said ink to said nozzle;
 - an energization part provided on said passage for applying energy to said ink in said passage to form said jet; and
 - an ink inlet formed in communication with said passage for receiving said ink, said inlet including therein filter means which is made from stainless steel mesh for eliminating particles from said ink supplied to said inlet; and
 - an ink reservoir unit for holding therein said ink, said ink reservoir supplying said ink held therein to said inlet of said recording head part, said ink reservoir accommodating therein a material infiltrated with said ink;
 - said recording head unit carrying thereon first connection means as a part of said recording head unit, for connecting said recording head unit to said ink reservoir unit;

APPENDIX (cont.)

said ink reservoir unit carrying thereon second connection means corresponding to said first connection means as a part of said ink reservoir unit, for connecting said ink reservoir unit to said recording head unit;

said first and second connection means being so formed that said first and second connection means establish, when said ink reservoir unit is mounted upon said recording head unit, a detachable engagement with each other in a manner, such that said ink in said reservoir unit flows to said passage in said recording head unit; and

a carriage member constructed so as to be mounted upon an image recording apparatus for carrying thereon said recording head unit and said reservoir unit together detachably in the state that said recording head unit and said reservoir unit are connected with each other detachably such that said reservoir unit connected to said recording head unit is removable therefrom, said carriage member having a positioning part for determining a position of said nozzle of said recording head unit with respect to said carriage member, and wherein said ink reservoir carrying a vent ;

said recording head unit having a positioning part for engagement with said positioning part of said carriage member, said recording head unit carrying thereon electrode contacts.